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(58) Field of search

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(54) Adhesive tape

(57) An adhesive tape is provided with an area along one or both of its edges which is adhesive free such that when the tape is stuck down either on its storage reel or on an item at least one corner thereof is not stuck down such that removal of the tape is facilitated.

GB 2 073 611 A

SPECIFICATION

Improvements relating to adhesive tapes

5 The present invention concerns improvements relating to adhesive tapes or sheets, especially but not exclusively plastics material adhesive tapes.

Present adhesive tapes which are usually wound into reel form are unsatisfactory in many respects.

10 When such a tape is used without the aid of a tape dispenser it can be difficult to find and free the end of the tape and in industrial and commercial applications this can be time-consuming and consequently expensive. It can also be difficult to remove the tape after it has been applied to an item without damaging the surface which the tape is adhering to. In addition it is often found that on removing the tape from the reel it breaks, the breakage normally being due to a slight flaw in the plastics material or more likely damage to the edge of the tape caused, for example, by cuts etc. in the side of the reel.

It is an object of the present invention to obviate or mitigate these disadvantages.

According to the present invention there is provided an adhesive tape comprising a backing member carrying adhesive on at least one face thereof, certain areas of said face or faces being non-adhesive.

Preferably the adhesive is of the "self adhesive" type.

Preferably the non-adhesive area is a linear portion along one edge of the tape. Alternatively, it may be a linear portion along both edges of the tape.

Preferably the tape is of plastics sheet material.

35 The non-adhesive areas may be provided by keeping them free of adhesive, by rendering adhesive inactive by chemical means, by fixing a non-adhesive covering thereon or by applying no adhesive coating to the areas.

40 Further according to the present invention there is provided a method of manufacturing an adhesive tape from a web of sheet-like material, comprising applying adhesive to areas of the web which are spaced apart in the transverse direction of the web as the web is moved past adhesive application means and slitting the web in its longitudinal direction to form a plurality of tapes.

Preferably the adhesive is applied by a certain coating technique, the curtain extending across the entire width of the web, masking members provided above the web preventing adhesive from being applied to the said areas.

Preferably the masking members are reciprocated in the longitudinal direction of the web, any adhesive on the masking members being removed when they are not in the region of the curtain of adhesive.

Alternatively, the masking members are continuously moved above the web and are cleaned of adhesive at an area remote from the curtain coating means. These members are preferably endless bands.

60 Further according to the present invention there is provided a method of manufacturing an adhesive tape from a web of sheet-like material, comprising applying adhesive to only certain areas of the web by a roller coating technique and slitting the web in

its longitudinal direction to form a plurality of tapes.

An embodiment of the present invention will now be described by way of example only.

A plastics material backing member has a pressure sensitive "self" adhesive coating on one face thereof, the area along one edge of the tape being free from adhesive. Conveniently said adhesive-free area may be approximately three millimetres wide although this can be varied in accordance with the width of the tape.

70 The adhesive tape is stored in reel form and it will be realised that at the end of the tape there will always remain a corner which is not stuck down so that the end can be readily located and peeled off from the tape. Furthermore after the tape has been applied to an item it can be readily removed as there will be one corner at each end thereof which is free of adhesive and which can be readily peeled to provide an area which can be gripped during the subsequent removal of the tape.

80 The edge of the tape which is not adhesive coated will be of less thickness than the adhesive coated tape area and the rest of the reel will be solid on the coated areas. As the edges of the reel of less thickness a soft edge reel will be provided and this soft edge which is of lower tension than the coated area will be less susceptible to damage. Also, if the edge is damaged or a production flaw exists in the tape than as the uncoated tape edges are of lower tension than the rest of the tape the tape will be less liable to break when it is under tension, for example when it is being pulled off the reel.

In a first modification of the embodiment described above both edges of the tape are adhesive-free and in a further modification any suitable linear pattern can be adhesive-free or the adhesive-free areas can be of lateral/oblique or any suitable geometrical shape that will provide an adhesive-free section when the tape is cut at any point along its length.

100 In the embodiments and modifications described above the adhesive-free areas have been provided by failing to coat the face of the backing member with adhesive and in a further modification non-adhesive areas can be provided by removing adhesive, for example, by chemical means from selected areas of the tape to which adhesive has been applied over its entire area. In another modification involving a tape having adhesive over its entire area the non-adhesive regions can be provided by rendering the adhesive thereon inactive over certain areas, for example the adhesive can be coated with a suitable chemical or by another thickness of backing material. In this latter modification the further thickness of backing material can be provided by rolling or doubling over the edges of the tape.

115 In a still further modification adhesive can be applied in any of the ways described above to both faces of the tape.

120 Normally adhesive tape of this type is manufactured by applying an adhesive coating to one or both faces of a web or sheet-like plastics material, thereafter slitting the web along lines parallel to its longitudinal axis and reeling up the narrow band of adhesive coated web into individual reels of adhesive tape.

This generally accepted technique can be utilised for producing tape according to the present invention but it will be realised that in order to provide the adhesive-free areas certain areas of the web must have no adhesive applied thereto. Normally the adhesive is applied by a curtain coating technique.

- 5 In one method according to the present invention masking members extending in the longitudinal direction of the web are provided close to the surface thereof to be coated by adhesive such that adhesive from the curtain is deposited on the masking member rather than the areas of web thereunder. To remove the adhesive deposited on the masking members they are moved relative to the curtain through a cleaning device. The movement may be a reciprocal movement, in which case the masking member is of a predetermined length and means are provided for causing the reciprocation, or alternatively the movement may be a continuous movement in which case the masking member is an endless band which is moved in the longitudinal direction of the web at the same or a slower speed.

Depending upon whether the tape has to have one adhesive free edge or two adhesive free edges the web is then slit either at the edge of the adhesive free area or in the centre thereof. It is then reeled.

Various modified methods may be employed for applying the adhesive, for example it may be applied by a roller. If a roller is employed then areas other than the edges of the tape may be rendered adhesive-free.

CLAIMS

1. An adhesive tape comprising a backing member carrying adhesive on at least one face thereof, certain areas of said face or faces being non-adhesive.
2. An adhesive tape as claimed in claim 1, in which the adhesive is of the pressure sensitive type.
3. An adhesive as claimed in claim 1 or claim 2, in which the non-adhesive area is a linear portion along one edge of the tape.
4. An adhesive tape as claimed in claim 1 or claim 2, in which the non-adhesive area is a linear portion along both edges of the tape.
5. An adhesive tape as claimed in any one of claims 1 to 4, in which the backing member is of plastics sheet material.
6. An adhesive tape as claimed in any one of the preceding claims, in which the non-adhesive areas are free from adhesive.
7. An adhesive tape as claimed in any one of claims 1 to 5, in which the non-adhesive areas have adhesion thereon which has been rendered inactive.
8. An adhesive tape as claimed in any one of claims 1 to 5, in which the non-adhesive areas have adhesion thereon which has been covered by a non-adhesive coating.
9. An adhesive tape as claimed in claim 8, in which the non-adhesive coating is another area of the backing member folded onto the said non-adhesive area.
10. A method of manufacturing an adhesive tape from a web of sheet-like material, comprising applying adhesive to areas of the web which are spaced apart in the traverse direction of the web as the web

is moved past adhesive application means and slitting the web in its longitudinal direction to form a plurality of tapes.

11. A method as claimed in claim 10, in which the adhesive is applied by a curtain coating technique, the curtain extending across the entire width of the web, masking members provided above the web preventing adhesive from being applied to the said areas.

12. A method as claimed in claim 11, in which the masking members are reciprocated in the longitudinal direction of the web, any adhesive on the masking members being removed when they are not in the region of the curtain of adhesive.

13. A method as claimed in claim 11, in which the masking members are continuously moved above the web and are cleaned of adhesive at an area remote from the curtain coating means.

14. Further according to the present invention there is provided a method of manufacturing an adhesive tape from a web of sheet-like material, comprising applying adhesive to only certain areas of the web by a roller coating technique and slitting the web in its longitudinal direction to form a plurality of tapes.

15. An adhesive tape substantially as hereinbefore described.

16. A method of manufacturing an adhesive tape substantially as hereinbefore described.

17. Any novel subject matter or combination including novel subject matter herein disclosed, whether or not within the scope of or relating to the same invention as any of the preceding claims.

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